

PAGE: 1

## RAW SEQUENCE LISTING

PATENT APPLICATION US/09/009,802B

DATE: 01/10/2000

**2B** TIME: 16:31:13

Input Set: I009802B.RAW

This Raw Listing contains the General Information Section and up to first 5 pages.



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<110> APPLICANT: McCarthy, Sean A.
     <120> TITLE OF INVENTION: NOVEL CRSP PROTEIN AND NUCLEIC ACID MOLECULES AND USES
 3
           THEREFOR
     <130> FILE REFERENCE: MEI-008
     <140> CURRENT APPLICATION NUMBER: US/09/009,802B
     <141> CURRENT FILING DATE: 1998-01-20
                                                                  ENTERED
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     <151> EARLIER FILING DATE: 1997-04-17
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     <150> EARLIER APPLICATION NUMBER: 60/071,589
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     <151> EARLIER FILING DATE: 1998-01-15
     <160> NUMBER OF SEQ ID NOS: 19
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39
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41
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                                                                              343
42
           Leu Ala Asn Leu Pro Pro Ser Tyr His Asn Glu Thr Asn Thr Asp Thr
43
                        90
                                            95
44
           aac gtt gga aat aat acc atc cat gtg cac cga gaa att cac aag ata
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Input Set: I009802B.RAW

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| 45       | Δsn   | Val      | Glv   | Δen  | Δen   | Thr              | Tle      | Иiс | Wa l  | Uic    | λνα    | Glu   | Tla    | uic        | Luc      | τle   |       |
| 46       | 1101  |          | 105   |      | 71011 |                  | 110      | 110 | vai   | 1113   | AT 9   | GIU   | 115    | 1113       | пур      | 116   |       |
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| 51       |       | Val      |       |      |       |                  |          |     |       |        |        |       |        |            |          |       |       |
| 52       | 135   |          | -     | -    |       | 140              | •        |     |       |        | 145    |       | •      |            |          | 150   |       |
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| 57       | Thr   | Cys      | Gln   | Pro  | Cys   | Arg              | Gly      | Gln | Arg   | Met    | Leu    | Cys   | Thr    | Arg        | Asp      | Ser   |       |
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| 60       | Glu   | Cys      | Cys   | Gly  | Asp   | Gln              | Leu      | Cys | Val   | Trp    | Gly    | His   | Cys    | Thr        | Lys      | Met   |       |
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| 62       | gcc   | acc      | agg   | ggc  | agc   | aat              | ggg      | acc | atc   | tgt    | gac    | aac   | cag    | agg        | gac      | tgc   | 679   |
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| 69       | Cys   | Thr      | Pro   | Leu  | Pro   | Val              | Glu      | Gly | Glu   | Leu    | Cys    | His   | Asp    | Pro        | Ala      | Ser   |       |
| 70       |       |          |       |      | 235   |                  |          |     |       | 240    |        |       |        |            | 245      |       |       |
| 71       |       | ctt      |       |      |       |                  |          |     |       |        |        |       |        |            |          |       | 823   |
| 72       | Arg   | Leu      | Leu   |      | Leu   | Ile              | Thr      | Trp |       | Leu    | Glu    | Pro   | Asp    | _          | Ala      | Leu   |       |
| 73       |       |          |       | 250  |       |                  |          |     | 255   |        |        |       |        | 260        |          |       |       |
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| 75       | Asp   | Arg      |       | Pro  | Cys   | Ala              | Ser      | -   | Leu   | Leu    | Cys    | Gln   |        | His        | Ser      | His   |       |
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| 78       | Ser   | Leu      | vaı   | Tyr  | Val   | Cys              | _        | Pro | Thr   | Phe    | Val    | -     | Ser    | Arg        | Asp      | Gln   |       |
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| 83<br>84 |       | agc      |       |      |       |                  | _        | -   | _     |        | _      |       | _      | _          | -        |       | 1015  |
| 85       | GIA   | Ser      | Pne   | Met  | 315   | GIU              | vaı      | arg | GIN   |        | Leu    | GIU   | Asp    | ьeu        |          | Arg   |       |
| 86       | 200   | a+ a     | a a t | ~~~  |       | - <del>-</del> - | ~~~      | ~+~ |       | 320    | ~~+    |       |        |            | 325      |       | 1062  |
| 87       |       | ctg      |       |      |       |                  |          |     |       |        |        |       |        |            |          |       | 1063  |
| 88       | ser   | Leu      | 1111  | 330  | GIU   | met              | HIG      | ьеu | 335   | GIU    | PLO    | ATG   | ATG    | A1A<br>340 | нтg      | ALC   |       |
| 89       | a a a | cta      | cta   |      | agg   | ma a             | asa.     | a++ |       | + <- > | 1012 1 | 10200 | .at ~+ |            | + > ~ ~  | tgtg  | 1117  |
| 90       |       | Leu      |       |      |       |                  |          |     | caya  | 9      | ya C   | cayg  | July   | 9 99       | Laya     | ıcycy | 1117  |
| 91       | AId   | пеп      | 345   | Сту  | AT 9  | GIU              | GIU      | 350 |       |        |        |       |        |            |          |       |       |
| 92       | caa   | tagas    |       | act= | attt  | ++ ه             | + 000    |     | r +~+ | atas   | .+++   | 2277  | -a+-a- | +          | <b>~</b> | aggct | 1177  |
| 93       |       |          |       |      |       |                  |          |     |       |        |        |       |        |            |          | ttgtg |       |
| 94       |       |          |       |      |       |                  |          |     |       |        |        |       |        |            |          | gagtc |       |
| <i>-</i> | cac   | ccycl    | Ju g  | ,    | Julia | 'a ac            | . Ly L L |     | . ayy | ,      | aca    | guet  | 99.5   |            | aaaa     | gaytt | 1431  |

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106
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                                 150
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| 146 |       |     |      |          |       |       |                  | つっに        |        |              |             |               | 220    |                   |                 |             |                  |     |
| 147 |       |     | 210  | T        | Dho   | Dro   | Wa l             | Cvs        | Thr    | Pro          | Leu         | Pro           | Val    | Glu               | Gly             | Glu         | Leu              |     |
| 148 |       |     |      |          |       |       | $\sim \sim \sim$ |            |        |              |             | 233           |        |                   |                 |             |                  |     |
| 149 | 2     | 225 |      | <b>3</b> | Dwo   | ת 1 ת | Ser              | Δra        | Leu    | Leu          | Asp         | Leu           | Ile    | Thr               | Trp             | Glu         | Leu              |     |
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| 152 |       |     |      |          |       |       |                  |            |        | ノカコ          |             |               |        |                   |                 |             |                  |     |
| 153 |       |     |      |          | 260   | 002   | uia              | Ser        | Len    | Val          | Tvr         | Val           | Cys    | Lys<br>285        | Pro             | Thr         | Phe              |     |
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| 155 |       | _   |      | 275      | 3     | 7 000 | Cln              | λen        | പ്പ    | Glu          | Ile         | Leu           | Leu    | Pro               | Arg             | Glu         | Val              |     |
| 156 |       |     |      |          |       |       |                  | 200        |        |              |             |               | 200    |                   |                 |             |                  |     |
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| 159 |       | 305 | .=   | _        | _     |       | 310              | . c.~      | · T.Δ1 | ነ ጥኮ፣        | · Gli       | ı Glı         | ı Met  | : Ala             | Leu             | Arg         | Glu              |     |
| 160 |       | Leu | Glu  | Asp      | Leu   |       |                  | ser        | . net  | . 1111       | 330         | ·<br>)        |        |                   |                 | 335         |                  |     |
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| 174 |       | 1   | -    |          |       |       | 5                |            |        |              | ~ ~~        | ים מכ         | a ac   | a ta              | a ac            | t cc        | a gtc            | 96  |
| 175 |       | gto | ccc  | c ac     | g gc  | c cc  | c gc             | g cc       | c gc   | - 00         | y ac        | y y ∪<br>~ ∧1 | a Th   | r Se              | r Al            | a Pr        | a gtc<br>o Val   |     |
| 176 |       | Va] | Pro  | o Th     | r Al  | a Pr  | o Al             | a Pr       | O AI   | a PI         | 0 111       | II AI         | .a 144 |                   | 3               | 0           | o Val            |     |
| 177 |       |     |      |          | 2     | 0     |                  |            |        |              | 5           | ~ ~           | or ora | a ac              | _               |             | c aat            | 144 |
| 178 |       | aag | g cc | c gg     | c cc  | g gc  | t ct             | c ag       | c ta   | C CC         | g Ca        | 19 9°         | .g ga  | ון או<br>וו או    | a Th            | r Le        | c aat<br>u Asn   |     |
| 179 |       | Lys | s Pr | o Gl     | y Pr  | o Al  | a Le             | u Se       | r Ty   | 'E PI        | 0 61        | .11 G1        | .u 01  | 4                 | 5               |             | u Asn            |     |
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| 181 |       | gag | g at | g tt     | c cg  | c ga  | g gt             | t ga       | ıg ga  | ia ct        | gat         | .g ga         | 19 9°  | נט מנ<br>מים ידיר | r Gl            | n Hi        | c aaa<br>s Lys   |     |
| 182 |       | Gl  | u Me | t Ph     | e Ar  | g Gl  | u Va             | 1 G1       | u G    | .u L€        | eu Me       | et G.         | Lu AL  | 50<br>50          | 01              |             | s Lys            |     |
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| 185 |       | Le  | u Ar | g Se     | er Al | a Va  | 11 G             | u G.       | Lu Me  | et G.        | Lu A.       | La G          | Iu O.  | Lu Al             |                 |             | a Lys.<br>80     |     |
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| 187 |       | gc  | a to | a to     | a ga  | ıa gt | g aa             | ac ci      | tg g   | ca a         | ac ti       | ta c          | 00 D   | ro es             | יט טי<br>אר ידי | zr Hi       | ic aat<br>Is Asn |     |
| 188 |       | Āl  | a Se | r Se     | er Gl | u Va  | al As            | sn L       | eu A   | la A         | 311 LI      | eu F          | LO P   | נט אנ             | <u> </u>        |             | ls Asn<br>95     |     |
| 189 |       |     |      |          |       |       | ) <b>_</b>       |            |        |              |             | 90            |        |                   |                 | -           |                  |     |
| 190 |       | qα  | gac  | c aa     | ac ac | a ga  | ac a             | cg a       | ac g   | tt g         | ga a        | at a          | at a   | cc al             | lott            | ie Vi       | g cac<br>al His  |     |
| 191 |       | Gl  | u Th | r As     | sn Th | ır A  | sp T             | nr A       | sn V   | aı G         | ту А        | sn A          | sn T   | 11I. T            |                 | 15 Va<br>10 | al His           |     |
| 192 |       |     |      |          |       |       |                  |            |        |              | רוו         |               |        |                   | _               |             |                  |     |
| 193 |       | Ca  | a qa | aa at    | tt ca | ac a  | ag a             | ta a       | cc a   | ac a         | ac c        | ag a          | ct g   | ga c              | aa d<br>Ir 14   | -y y'       | tc ttt<br>al Phe |     |
| 194 |       | Ar  | q G. | lu I     | le H  | is L  | ys I             | le T       | hr A   | sn A         | sn G        | ln T          | nr G   | ту G              | TII M           | et V        | al Phe           | •   |
| 174 |       |     | ,    |          |       |       |                  |            |        |              |             |               |        |                   |                 |             |                  |     |

1636

DATE: 01/10/2000 RAW SEQUENCE LISTING TIME: 16:31:13 5 PAGE:

PATENT APPLICATION US/09/009,802B

|            |                      |                   |       |       |          |       |            |            |        |       | I          | npu        | t Se       | et:            | 1009  | 802B.RAV |
|------------|----------------------|-------------------|-------|-------|----------|-------|------------|------------|--------|-------|------------|------------|------------|----------------|-------|----------|
|            |                      |                   |       |       |          |       | 120        |            |        |       |            | 125        |            |                |       |          |
| 195        | tca ga               | 115               |       |       |          |       | 120<br>ata | ara        | aac    | σaa   | σαα        | qqc        | aga        | agg            | agc   | 432      |
| 196        | tca ga<br>Ser Gl     | g aca             | gtt   | atc   | aca      | CCL   | gry :      | gya<br>Clv | Aen    | Glu   | Glu        | Glv        | Arq        | Arg            | ser   |          |
| 197        | Ser Gl               | u Thr             | Val   | IIe   | Thr      | ser   | vaı        | GIY        | ASP    |       | 140        | - 4        | _          | _              |       |          |
| 198        | 13<br>cac ga         | 0                 |       |       |          | 135   | ~~~        | tat        | aaa    | aaa   |            | atq        | tac        | tgc            | cag   | 480      |
| 199        | cac ga<br>His Gl     | g tgc             | atc   | atc   | gac      | gag   | gac        | Cve        | 61 v   | Pro   | Ser        | Met        | Tyr        | Cys            | Gln   |          |
| 200        | His Gl               | u Cys             | Ile   | Ile   | Asp      | GIU   | Asp        | Суз        | Gry    | 155   |            |            | •          | -              | 160   |          |
| 201        | 145                  |                   |       |       | 150      |       |            | ~~~        | cca    | tac   | caa        | aac        | caq        | agg            | atg   | 528      |
| 202        | 145<br>ttt go        | c agc             | ttc   | cag   | tac<br>- | acc   | cgc        | Cay        | Dro    | Cvs   | Ara        | Glv        | Gln        | Arg            | Met   |          |
| 203        | ttt go<br>Phe Al     | la Ser            | Phe   | Gln   | Tyr      | Tnr   | Cys        | GIII       | 170    | Cys   | 2129       | <b>-</b> 1 |            | 175            |       |          |
| 204        |                      |                   |       | 165   |          |       |            |            | 770    | as a  | cad        | cta        | tat        | atc            | tgg   | 576      |
| 205        | ctc to               | gc acc            | cgg   | gac   | agt      | gag   | tgc        | tgt        | gya    | Acn   | Gln        | Leu        | Cvs        | Val            | Trp   |          |
| 206        | ctc to<br>Leu Cy     | ys Thr            | Arg   | Asp   | Ser      | GIu   | Cys        | Cys        | СТУ    | Asp   | GIII       | шои        | 190        |                | -     |          |
| 207        |                      |                   |       |       |          |       |            | เหว        |        |       |            |            |            |                |       | 624      |
| 208        | ggt ca               | ac tgc            | acc   | aaa   | atg      | gcc   | acc        | agg        | ggc    | age   | aac<br>Λen | 232<br>237 | Thr        | Ile            | Cvs   |          |
| 209        | ggt ca<br>Gly H      | is Cys            | Thr   | Lys   | Met      | Ala   | Thr        | Arg        | GIY    | Ser   | ASII       | 205        | 1111       |                | -1    |          |
| 210        |                      |                   |       |       |          |       | ついい        |            |        |       |            | 200        |            |                |       | 672      |
| 211        | gac a                | ac cag            | g agg | gac   | tgc      | cag   | ccg        | ggg        | ctg    | cgc   | Cre        | 712        | Dhe        | Gln            | Ara   |          |
| 212        | gac a<br>Asp A       | sn Glr            | ı Arg | Asp   | Cys      | GIn   | Pro        | GIY        | ьeu    | Cys   | 220        | 1110       | 1110       | 02             | 5     |          |
| 213        | _                    |                   |       |       |          | 215   |            |            |        |       | 220        |            |            |                |       | 720      |
| 214        | 2<br>ggc c           | tg ctg            | g ttc | cct   | gtg      | tgc   | aca        | CCC        | ctg    | CCC   | gug        | gay        | 99°        | Glu<br>Glu     | Leu   |          |
| 215        | ggc c<br>Gly L       | eu Lei            | ı Phe | Pro   | Val      | Cys   | Thr        | Pro        | Leu    | PIO   | vai        | GIU        | GIY        | 014            | 240   |          |
| 216        |                      |                   |       |       | 220      |       |            |            |        | 233   |            |            |            |                |       | 768      |
| 217        | 225<br>tgc c         | at gad            | c ccc | gcc   | agc      | cgg   | ctt        | ctg        | gac    | Ctc   | ato        | mbr        | uyy<br>Trn | gay<br>III     | Leu   |          |
| 218        | Cys H                | at gad<br>[is As] | p Pro | Ala   | ser      | Arg   | Leu        | Leu        | ASP    | Бес   | ште        | TIIL       | ııp        | 255            |       |          |
| 219        |                      |                   |       | 015   |          |       |            |            | 250    |       |            |            |            |                |       | 816      |
| 220        | qag c                | ct ga             | t gga | gcc   | ttg      | gac   | cga        | tgo        | cct    | tgt   | ged        | ayu        | ggc<br>clu | . CCC<br>. Leu | Leu   |          |
| 221        | Glu F                | ct ga<br>Pro As   | p Gly | 7 Ala | Leu      | Asp   | Arg        | Cys        | PIC    | Cys   | ; Ald      | , per      | 270        | _              |       |          |
| 222        |                      |                   |       |       |          |       |            | /h ~       | •      |       |            |            |            |                |       | 864      |
| 223        | tgc o                | ag cc             | c cac | ago   | cac      | ago   | ctg        | gtg        | r tat  | gtg   | g tyc      | , aay      | , Dro      | Thr            | Phe   |          |
| 224        | Cys C                | cag cc<br>Sln Pr  | o His | s Ser | His      | ser   | Leu        | val        | . Tyi  | · val | L Cys      | д<br>285   |            | , 1111         |       |          |
| 225        |                      |                   | _     |       |          |       | 280        | 1          |        |       |            | 20.        | ,          |                |       | 912      |
| 226        | qtg g                | 27<br>gg ag       | c cgt | t gad | caa      | gat   | ggg        | gag        | g ato  | ctg   | g cti      | y CCC      | ) ayo      | r Gli          | ı Val |          |
| 227        | Val (                | ggg ag<br>Gly Se  | r Arg | g Ası | Glr      | ı Asp | Gly        | , Gli      | 1 II-6 | э ьег | и пс.      |            | AL         | g GIC          |       |          |
| 228        |                      |                   |       |       |          | 201   |            |            |        |       | 50,        | •          |            |                |       | 960      |
| 229        | ccc                  | 290<br>gat ga     | g ta  | t gaa | a gtt    | ggc   | ago        | tto        | c ate  | g ga  | g ga       | g gu       | y cyt      | cas            | n Glu |          |
| 230        | Pro i                | gat ga<br>Asp Gl  | u Ty  | r Gl  | ı Val    | L Gl  | / Sei      | : Phe      | e Me   | L GI  | u Gi       | u va.      | r wr       | 9 611          | 320   |          |
| 231        |                      |                   |       |       | 21/      | `     |            |            |        | 21    | 9          |            |            |                |       |          |
| 232        |                      | gag ga            | ac ct | g ga  | g agg    | gago  | cts        | g ac       | t ga   | a ga  | g at       | g gc       | g Cu       | y ay:          | g gag | 1000     |
| 233        | Leu                  | gag ga<br>Glu As  | sp Le | u Gl  | u Arg    | g Sei | c Let      | ı Th       | I GI   | u Gi  | u Me       | t Al       | а це       |                | -     |          |
| 234        |                      |                   |       | 2.2   | 5        |       |            |            | 33     | U     |            |            |            |                | _     | 1050     |
| 234        | cct                  | gcg go            | ct gc | c gc  | c gc     | t gca | a ct       | g ct       | g gg   | a ag  | g ga       | a ga       | g at       | <u>ر</u>       |       | 1000     |
| 235        | Pro                  | gcg go<br>Ala Al  | la Āl | a Al  | a Ala    | a Ala | a Le       | и Le       | u GI   | y Ar  | g Gl       | u GI       | u          | _              |       |          |
| 237        |                      |                   | 34    |       |          |       |            | 34         | 5      |       |            |            | 35         | U              |       |          |
| 237<br>238 | <210> SEQ            | ID NO             | 4     |       |          |       |            |            |        |       |            |            |            |                |       |          |
| 238<br>239 | <210> 5EQ <211> LENG |                   |       |       |          |       |            |            |        |       |            |            |            |                |       |          |
| 239        | <211> DENO           |                   |       |       |          |       |            |            |        |       |            |            |            |                |       |          |
| 240        | <213> ORGA           | NISM:             | Homo  | sap   | iens     |       |            |            |        |       |            |            |            |                |       |          |
| 241        | <220> FEAT           |                   | -     | •     |          |       |            |            |        |       |            |            |            |                |       |          |
| 242        | <221> NAME           |                   | CDS   |       |          |       |            |            |        |       |            |            |            |                | 1     |          |
| 243        | <221> NAME           |                   |       | 5)(   | 796)     |       |            |            |        |       |            |            |            |                | /     |          |

<222> LOCATION: (125)..(796) Please Note: Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

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## VERIFICATION SUMMARY PATENT APPLICATION US/09/009,802B DATE: 01/10/200 TIME: 16:31:13

DATE: 01/10/2000

Input Set: 1009802B.RAW

Original Text Line ? Error/Warning \_\_\_\_\_\_ 92 W "N" or "Xaa" used: Feature required caatagaaat agctaattta tttccccang tgtgtgct 448 W "N" or "Xaa" used: Feature required accccatttn attctagagt cnagaacgca aggatctc 593 W Invalid/Missing Amino Acid Numbering